JPRS 82906

18 February 1983

China Report

SCIENCE AND TECHNOLOGY

No. 188

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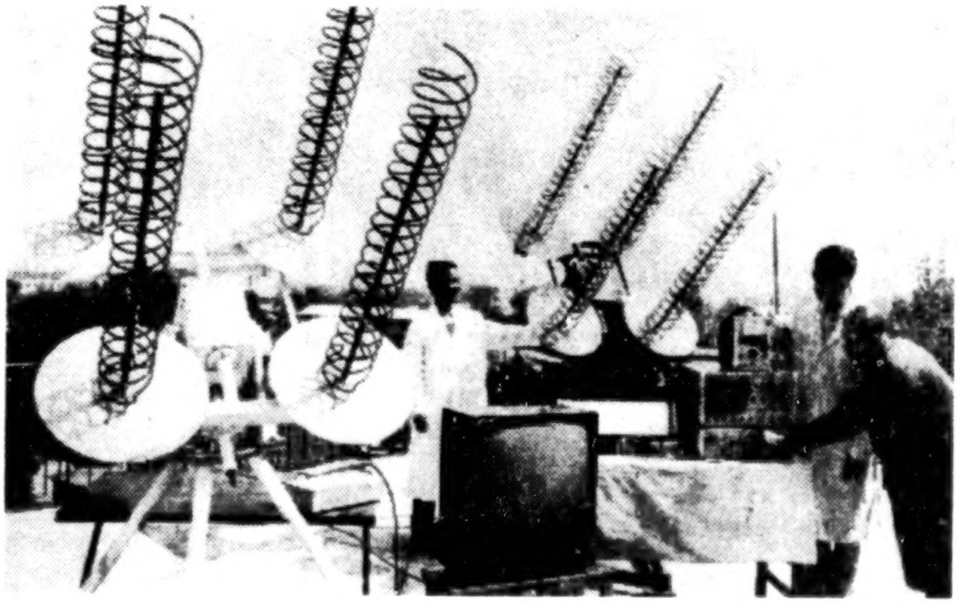
SATELLITE BROADCAST RECEIVER BUILT

Beijing RENMIN RIBAO in Chinese 29 Dec 82 p 2

[Text] The Beijing Institute of Television Technology recently succeeded in building a 714 megahertz satellite direct broadcast receiver which can be used by journalism, sports, and foreign language instruction units.



CSO: 4008/45

AUTHOR: TAN Degao [6223 1795 7559]
WANG Nengbin [3769 5174 2430]

ORG: Both of Nanjing Institute of Technology

TITLE: "A Diagnosing and Teaching Program System for Traditional Chinese Medicine"

SOURCE: Nanjing NANJING GONGXUEYUAN XUEBAO [JOURNAL OF NANJING INSTITUTE OF TECHNOLOGY] in Chinese No 4, 1982 pp 61-68

TEXT OF ENGLISH ABSTRACT: This paper describes a diagnosing and teaching program system for traditional Chinese medicine with emphasis on the combinational logic diagnostic model and the algorithm for differentiating syndromes. This system features the simple diagnostic model, suitable data structures, the clear boundary between program and data, the model-oriented algorithm and, especially, this system does not need the time-consuming work of mathematical statistics during summarization of the experiences of doctors. Therefore, this system possesses better generality, expansibility and a wider range of application.

9717
CSO: 4009/78

AUTHOR: DIAN Tong [7193 6639]

ORG: None

TITLE: "New High-vacuum Valve"

SOURCE: Beijing YIQI YU WEILAI [INSTRUMENTATION AND FUTURE] in Chinese No 12, 1982 p 10

ABSTRACT: Shanghai Electrical and Vacuum Device Research Institute has made the BF series metallic glass structured, lubricant-free high-vaccum valve, with fluorine rubber and glass seals, to operate in the range of 1-10^{-8} torr and under the temperature condition of -20°C to +80°C. In the series, the I type has a path caliter of $11^{\pm 1}$ mm, and the II type $16^{\pm 1}$ mm. When the valve is closed, the rate of leakage is $\leqslant 10^{-9}$ torr liter/sec. Due to the good sealing property , this series of valves are extensively suitable in various vacuum systems, aerating systems, and pipes in contact with corrosive gases.

AUTHOR: GONG Xian [6300 3759]

ORG: None

TITLE: "Multicore Flat Electrical Cable"

SOURCE: Beijing YIQI YU WEILAI [INSTRUMENTATION AND FUTURE] in Chinese No 12, 1982 p 10

ABSTRACT: Chongqing Plastic Cable Plant succeeded recently in making the multicore flat-shaped cable used in instruments and meters. There are now the 2 types of 12-core and 16-core cables and types with 20, 40, and 50 cores are being developed. A soft polyvinyl chloride (PVC) material is used for insulation and a ϕ 0.12 x 12 tin-plated copper wire is used as the conductor. At AC 500 v, the cable is operable in a temperature range of -15 to +65°C. This flat cable does not become hard in the winter and is especially suitable as the connecting cable from instruments and meters. It may be directly soldered onto rectangular plugs to form a reliable contact. It also has the merits of high degree of insulation and little DC resistance. The cables are now in production.

6248
CSO: 4009/72

Machine Tools

AUTHOR: CAO Weiqian [2580 4850 0051]

ORG: None

TITLE: "Conference to Establish Modular Machine Tool Standardization Technology Committee Held in Dalian"

SOURCE: Dalian ZUHE JICHUANG [MODULAR MACHINE TOOL] in Chinese No 12, 1982 p 31

ABSTRACT: For the purpose of meeting the needs of the work of standardizing modular machine tools in China, revising quality and speed indices, and strengthening the link with international standardization organizations, a conference to establish the Modular Machine Tool Standardization Technology Committee and 19 State Standard and Ministerial Standard Examination Meetings were held simultaneously in Dalian on 17-21 Nov 82. A total of 30 persons including representatives of the Bureau of Modular Machine Tool Industry Ministry of Machine Industry, Standardization Research Insitute Ministry of Machine Industry, invited guests, etc. During the conference, the participants learned related documents issued by the State Economic Committee and Science Committee, and the National Bureau of Standards, as well as the table of standardization system and the principles for adopting international (foreign) standards during the 6th 5-year plan formulated by Dalian Research Institute of Modular Machine Tools. Several State and Ministerial standards were examined and approved. Two Ministerial standards were not approved because opinions remained divided regarding the need for revising the original standards of the 2 items.

62-8
CSO: 4009/81

Machine Tools

AUTHOR: None

ORG: None

TITLE: "1982 Machine Tool Exibit Held in Wuhan"

SOURCE: Beijing JICHUANG [MACHINE TOOL] in Chinese No 12, 1982 p 30

ABSTRACT: For the purpose of summarizing and exchanging new techniques and new achievements in the machine tool trade to serve the users better and to bring machine tool industries in China to the advanced level of the world quickly, a 1982 Machine Tools Exibit was organized by China General Company of Machine Tools and held in Wuhan from 9 Oct to 8 Nov. This was the largest exhibition since the liberation. More than 800 factories exibited 219 metal cutting machines, 58 forging presses, 7 casting and founding machines, 13 woodworking machines, 16 large precision measurement instruments, and more than 2000 accessory fittings, covering an area of 6000+ m^2. Among the exibited products, there were numerical controlled maching consoles very close to the technological level of the world and high precision machine tools of improved efficiency and degree of automation and also several types of machines, cooperatively produced by Chinese and foreign industries. Concurrently, China General Company of Machine Tools also held a 1983 National Machine Tool Order-taking Meeting. Due to the fact that the users can see the samples at the exibit, several times the number of expected orders have been taken to demonstrate that a resurgence of China's machine tool industry has begun. The exibited products will be introduced in the No 1, 1983 issue of the journal.

62-8
CSO: 4009/82

AUTHOR: None

ORG: Department of Information

TITLE: "Conference of Superplasticity of Metals Held in Northeast Institute of Technology"

SOURCE: Shenyang DONGBEI GONGYE XUEYUAN XUEBAO [JOURNAL OF NORTHEAST INSTITUTE OF TECHNOLOGY] in Chinese No 4, Dec 82 p 52

ABSTRACT: In response to a request of China Society of Metals and China Association of Nonferrous Metal Processing, a National Symposium of Superplasticity of Metals was held in the institute on 30 Nov - 3 Dec 82. Prof. BI Kezhen [3968 0344 2823] President of the institute, Deputy Director of the provincial Socity of Metals and Vice-chairman of Liaoning Province Science Association delivered the opening statement and Prof. MA Longxiang [7456 7893 5046], Vice-president of the institute, Chairman of Committee of Nonferrous Metal Materials and Processing China Society of Metals, and member of the Standing Committee of China Society of Metals chaired the conference; he also delivered a speech and a scientific report. The conference was attended by 107 delegates representing 51 units of Ministry of Metallurgical Industry, Ministry of Machine Industry, Ministry of Aviation Industry, Ministry of Electronic Industry, Ministry of Space Industry, Ministry of Weapons Industry, Ministry of Education, and Chinese Academy of Sciences, designing departments, and schools of higher education. The institute delivered 16 papers. The condition of development of superpastic technology here and abroad was introduced. Through extensive discussions, the direction of future development in China of this technology was clarified.

AUTHOR: None

ORG: None

TITLE: "National Conference of Slurry Injection Technology Held in Northeast Institute of Technology"

SOURCE: Shenyang DONGBEI GONGYE XUEYUAN XUEBAO [JOURNAL OF NORTHEAST INSTITUTE OF TECHNOLOGY] in Chinese No 4, Dec 82 p 78

ABSTRACT: The National Conference of Slurry Injection Technology of China Society of Metals was held in the institute on 5-10 Oct 82 and attended by 143 delegates representing 82 units of the 8 systems of Chinese Academy of Sciences, Ministry of Coal Industry, Ministry of Water Conservancy and Electric Power, Ministry of Petroleum Indistry, Ministry of Chemical Industry, Ministry of Railways, Ministry of Transportation, and Ministry of Metallurgical Industry. A total of 83 papers were received and 13 of these were delivered. Foreign and domestic development and condition of slurry injection technology were introduced. The successful application of the technology to the reinforcement of soft dirt or soft rock foundations was pointed out. It was proposed during the conference that the 1984 Conference on Drilling Raises and Slide Shafts should be held in Yunnan during the second quarter of the year.

[illegible] [illegible]

[illegible]

TITLE: "Second National Salt Melt Technology Conference Held in Northeast Institute of Technology"

SOURCE: Shenyang DONGBEI GONGYE XUEYUAN XUEBAO [JOURNAL OF NORTHEAST INSTITUTE OF TECHNOLOGY] in Chinese No 4, Dec 82 p 78

ABSTRACT: The Second National Salt Melt Chemistry and Electrochemistry was held in the Institute on 13-17 Sep and attended by more than [illegible] delegates representing [illegible] units of schools of higher education, scientific research institutes, and factories. An opening speech was delivered by Prof. GUAN Guangde [illegible], a vice-president of the Institute. A total of [illegible] papers were read, dealing with basic theoretical research on salt melt chemistry and electrochemistry, problems of industrial production, aluminum, magnesium, titanium, rare earth metals, tin, and antimony, and semiconductor salt melt electrochemistry, etc. The Institute delivered 17 of these. Nine specialists, including researcher CHEN Nianyi [illegible], were invited to deliver reports. Prof. QIU Zhuxian [illegible] of the Institute reported on the progress of aluminum electrolysis. The 1983-1985 activity plan was discussed and proposed. Zhongshan University was requested to launch a training class of electrochemical testing technology in Guangzhou in 1984. The Institute was requested to compile and publish a collection of the papers of this conference. Through negotiation, it was decided that the Third National Salt Melt Technology Conference will be held in Shanghai in 1985.

[illegible]

CSO: [illegible]

[illegible]

[illegible]

[illegible]

TITLE: "Speed Reducer Gear Wheel Breakthrough Certification Conference Held in Shanghai"

SOURCE: Shanghai [illegible] [MACHINERY] in Chinese [illegible]

ABSTRACT: The Bureau of Heavy Mining Machinery of Ministry of Machine Industry held a speed reducer gear wheel breakthrough certification conference in Shanghai. It was held to proceed with certification of the [illegible] response [illegible] hardened gear surface [illegible] speed reducer and the technique of double-coated [illegible] produced by Shanghai Hoist and Conveyance Machinery Plant. Delegates participating in the conference uninously agreed that the Shanghai Hoist and Conveyance Machinery Plant had performed a great deal of work in improving the quality and [illegible] life of gear wheels and obtained the following achievements: (1) After 10[illegible] rotations of the low speed shaft, the surface of the gear does not show any [illegible] defects; (2) The new process of taking specimen of the double coating, vacuum [illegible] plating, and electromicroscopic enlargement of the contact surface is an ideal [illegible] method of testing; (3) The speed reducer test device designed and made by the plant has the merits of simple, portable, and low energy consuming; (4) The hard alloy rotary gear cutting technique provides a new way of precision machining of hard gear surface.

[illegible]
CSO: [illegible]

AUTHOR: WANG Rongxiang [3769 2837 4382]

ORG: Special Correspondent of the journal

TITLE: "Symposium on the Special Subject of Opencast Mining Equipment held by the Metallurgical Equipment Committee China Society of Metals"

SOURCE: Luoyang KUANGSHAN JIXIE [MINING MACHINERY] in Chinese No 12, Dec 82 back-cover

ABSTRACT: The special subject symposium on opencast mining equipment was held in Hengyang Metallurgical Machinery Plant in middle Nov 82. A total of 43 papers were received, dealing mainly with opencast boring machines, loading machines, and auxiliary machines. Papers submitted to this symposium have the following characteristics: (1) New designing methods, techniques, and work processes have begun to be applied to opencast mining tools; (2) Theoretical analyses are better integrated with experimental tests; (3) Using scientific and technological work to serve the improvement of economic benefits is being emphasized; (4) Digesting and reconstructing introduced technologies have been emphasized; (5) Considerable progress in studies on coordinating opencast equipment and auxiliary machines. Papers on "A Study on the Characteristics of the Pressure Applying Mechanism of Gear Wheel Drills", "Dual Pump Wheel Hydraulic Torque Converter and Its Hydraulic Pressure Control System," and nine other papers were judged to be of better quality; they were regarded by the delegates to be rigorous in narration, with supportive experimental data, and a higher level of scientific learning.

6248
CSO: 4009/76

AUTHOR: HAN Jiye [7281 4949 2814]

ORG: None

TITLE: "Brief News of National Optimization Theory and Application Exchange Conference"

SOURCE: Shanghai ZIRAN ZAZHI [NATURAL JOURNAL] in Chinese No 12, Dec 82 p 913

ABSTRACT: The National Optimization Theory and Application Exchange Conference, under the auspices of China Mathematical Society Operational Research Society was held in Central China College of Engineering in Wuhan City on 16-21 Oct 82. This was the first nationwide conference on the subject of optimization, called mainly to exchange the results of theoretical research and application of all branches, including mathematical programming theory, composite optimization, graphic, random opitimization, etc. of optimization in the country, to introduce the progress in the field in foreign countries, and to exchange the experiences of the various organizations in teaching and in serving 4-modernization construction in recent years. The symposium was attended by 210 delegates representing 140+ units all over the country. More than 140 papers were delivered, dealing with optimization in fields of structure, machinery, steel and iron, chemical engineering, hydroelectricity, electronics, mining, petroleum, textiles, economics, etc. The characteristics and functions of optimization, targets of training and teaching plans, the work of applications, and problems existing in developing optimization, etc. were enthusiastically discussed.

6248
CSO: 4009/87

AUTHOR: PANG Yuqin [1690 3768 3830]

ORG: None

TITLE: "Brief History of Prospecting Engineering--Selected Experiences of Prospecting Engineering in Jilin Province"

SOURCE: Beijing TANKUANG GONGCHENG [PROSPECTING ENGINEERING] in Chinese No 6, 20 Dec 82 p 13

ABSTRACT: The Jilin Provincial Bureau of Geology was established in 1958. A general prospecting work for several tens of ores, including iron, nickel, gold, copper, and gypsum has been performed at more than 100 deposits and [illegible] m of drilling have been completed. Results of this amount of work have promoted the development of iron and steel, metallurgy, chemical engineering, and construction materials in the province. The prospecting teams have continued to develop new techniques, new work processes, and the adoption of new equipment facilities to cause the capability and various economic indices of the teams to be greatly improved, compared with the condition of 1954 when they were first organized. The efficiency of each drill is 5 times higher and the annual boring footage 211 times higher. This paper narrates the history and progress of the bureau in the following stages: (1) Before the liberation: scattered projects entirely in the hands of Japanese; (2) 1954-58: 2 drills and 392 employees, with a monthly efficiency of 91 m per drill; (3) 1958-64: Using mainly iron and alloy drills; with 6,668 employees, the efficiency was 106 m per month per drill; (4) 1965-74: Using mainly granular steel and alloy drills to produce an efficiency of 332 m; (5) 1975-81: Extending small caliber diamond drill and wire-line coring techniques.

AUTHOR: ZHI Wen [1807 2429]

ORG: None

TITLE: "Placer Deposit Bore Prospecting Information and Research Meeting Held in Ankang of Shaanxi"

SOURCE: Beijing TANKUANG GONGCHENG [PROSPECTING ENGINEERING] in Chinese No 6, 20 Dec 82 p 65

ABSTRACT: The Placer Deposit Bore Prospecting Meeting sponsored by Ministry of Geology was held in Ankang on 3-7 Sep. This was the first technical exchange meeting of this subject. It was attended by 49 delegates representing related research departments of bureaus of geology of 15 provinces and cities. Twenty delegates delivered reports of experiences of conducting placer deposit prospecting in river valleys, alluvial flats, littoral plains, and taeles, using various engineering, coring, and drilling machines. Deputy Director of the Prospecting Division, ZHANG Zhimin [1728 1807 2494] in his summation speech pointed out that China has rich resources of placer deposits; the geology system and the gold troop [?] now have special teams with nearly 200 drills at their disposal. He also suggested that in the future placer deposit boring machines that are light and have multiple functions and several different calibers and depth capabilities should be designed and gradually standardized. Existing rules should be revised to produce a unified regulation of placer drilling operations.

AUTHOR: ZHI Wen [1807 2429]

ORG: None

TITLE: "Meeting to Exchange and Extend Experiences of Superior Slurry Held in Luoyang"

SOURCE: Beijing TANKUANG GONGCHENG [PROSPECTING ENGINEERING] in Chinese No 6, 20 Dec 82 p 65

ABSTRACT: The meeting to exchange and extend experiences of superior slurry, sponsored by Ministry of Geology, was held in Luoyang on 9-14 Sep and chaired by ZHANG Zhimin, Deputy Director of the Prospecting Division. A total of 104 persons, representing various bureaus and teams, schools and research institutes, and ministries of coal and petroleum attended and 60 sets of technical data were received. The meeting proceeded in 2 stages: During the first stage, 15 delegates introduced the results and economic benefits of using polypropylamide slurry prepared with good quality Clay. The delegates also went to observe the drilling operation of the 2nd team of Henan Group No 3. During the 2nd stage, various advances in hole reinforcement and leak plugging work were extensively discussed. The documents, "Method of Managing Slurry Technology" of the Prospecting Division and "Bentonite Slurry used in Prospecting and Its Standard Test Method (draft)" of the Ministry of Geology were also discussed. In his concluding speech, ZHANG Zhimin urged leaders of all ranks to emphasize slurry work and to insist upon extending and implement all the rules and regulations of making superior quality clay slurry for comprehensive treatment of complex starta. The bureaus, teams, and research departments were urged to develop new treatment agents for various types of complex strata and to cooperate in studies on bio-polymer slurries.

6248
CSO: 4009/77

AUTHOR: HUA Chongyuan [5478 1504 0678]
XU Peifei [1776 0160 2431]
WANG Jingrong [3076 0079 2837]

ORG: All of Baoji Institute of Nonferrous Metals

TITLE: "Stabilization Technique of Superconducting Magnets Impregnated with Epoxy Resin"

SOURCE: Beijing DIWEN WULI [ACTA PHYSICA TEMPERATURAE HUMILIS SINICA] in Chinese No 4, 1982 pp 284-290

TEXT OF ENGLISH ABSTRACT: A technique to impregnate superconducting magnets with an epoxy resin has been developed, by means of which two commercial magnets and a third one for experimental use have been fabricated. Their current carrying ability is up to 94-100 percent of that in the critical current of the short samples on their load lines.

AUTHOR: YU Kun [0060 7649]
DING Xiupu [0002 0208 3877]
LIU Peicheng [0491 0160 2052]
GAO Gongfu [7559 0501 3940]

ORG: YU of the Institute of Physics, Chinese Academy of Sciences, Beijing; DING, LIU and GAO all of the Jixi Electrical Instrumentation Factory, Heilongjiang

TITLE: "Investigations of Model JWL-150A Superconducting Magnet Power Supply and SCR Automatic Protection System"

SOURCE: Beijing DIWEN WULI [ACTA PHYSICA TEMPERATURAE HUMILIS SINICA] in Chinese No 4, 1982 pp 296-302

TEXT OF ENGLISH ABSTRACT: Presented in this paper are the basic design principles of the model JWL-150A superconducting magnet power supply, its SCR automatic protection system and its performance data.

AUTHOR: WANG Zhongtian [3769 0022 1131]
CHENG Benpei [4453 2609 1014]

ORG: Both of the Southwest Institute of Physics

TITLE: "Application of Regularization Method to the Design for Superconducting Magnets of the Gyrotron"

SOURCE: Beijing DIWEN WULI [ACTA PHYSICA TEMPERATURAE HUMILIS SINICA] in Chinese No 4, 1982 pp 308-313

TEXT OF ENGLISH ABSTRACT: By using the regularization method, a number of groups of current distribution have been so successfully obtained that the configuration of the static magnetic field which meets the requirements of the gyrotron can be produced. An error-correcting factor is introduced into the existing regularization method so as to improve the precision of the local magnetic field. Numerical results show that the use of the factor proves effective. This paper presents a concrete design of superconducting magnets of the gyrotron.

9717
CSO: 4009/73

Thermophysics

AUTHOR: GE Minglong [5514 2494 7893]

ORG: None

TITLE: "Thermodynamic Extrapolation of Rocket Engine Performance Parameters"

SOURCE: Beijing GONGCHENG REWULI XUEBAO [JOURNAL OF ENGINEERING THERMOPHYSICS] in Chinese No 4, Nov 82 pp 323-329

ABSTRACT: Classic thermodynamic computations for theoretical rocket engine performance, as introduced in NASA TN D-132 (Oct 59) and other literatures, are very useful but time-consuming; therefore, other extrapolation equations have also been proposed (see references 2-5). This paper proposes simpler and more accurate equations, suitable for those who use pocket calculators for this purpose. One isentropic reference line and two isenthalpic derivatives are used to establish the performance parameters. When the initial enthalpy of the propellant, the combustion chamber pressure, and the nozzle exit pressure change, the equations introduced in the paper may be used for extrapolation calculations of specific impulse, characteristic velocity, ratio of nozzle exit area to throat area, and thermodynamic parameters of the combustion chamber and the nozzle exit. The process of establishing the equations is explained and their precision analyzed.
This paper was received for publication in Dec 81.

AUTHOR: FANG Zhaokui [2455 3564 1145]

ORG: None

TITLE: "Symbol Type Thermodynamic Calculation of the Rocket Engine"

SOURCE: Beijing GONGCHENG REWULI XUEBAO [JOURNAL OF ENGINEERING THERMOPHYSICS] in Chinese No 4, Nov 82 pp 330-333

ABSTRACT: In China, a chemical type thermodynamic calculation of rocket performance has been extensively applied; therefore, the chemical reaction equations must be linked with the chemical elements contained in the propellant to cause it difficult to write the design program. This paper proposes a method of using symbols to substitute the chemical elements, the molecular formulas, etc. The 4 basic equations of mass conservation, energy conservation, chemical equilibrium, and Dalton's law [partial pressure] using this symbolic method are introduced. Using this method, the author and colleagues wrote a program in BCY language to proceed with thermodynamic computation on the 109C computer for several tens of propellants and successful results were obtained for all.

AUTHOR: None

ORG: China Society of Engineering Thermophysics

TITLE: "The Third Annual Conference of China Society of Engineering Thermophysics Held in Wuxi"

SOURCE: Beijing GONGCHENG REWULI XUEBAO [JOURNAL OF ENGINEERING THERMOPHYSICS] in Chinese No 4, Nov 82 backcover

ABSTRACT: The Third Annual Conference of China Society of Engineering Thermophysics was held on 9-15 Oct 82 in Wuxi [Jiangsu Province.] Participants included 230 delegates representing 86 research institutes, schools of higher education, industrial plants, and information and publication units. The delegates were of the opinion that almost all key items in the strategy for the development of the national economy have a direct relationship with engineering thermophysics; therefore, all who work in this field have the honor of shouldering an historical responsibility. About 72 percent of the delegates delivered papers, dealing with engineering thermophysics and energy conservation, heat engine pneumatic thermodynamics, heat transfer and mass transfer, and combustion. Dr MA Shiqi [7456 0013 3823], a British subject of Chinese ancestry was invited to speak on "the Pdf Concept and its Application in the Mathematical Simulation of Combustion." Seven Chinese scientists, returned from attending international conferences, delivered reports on conditions of research of related fields in England, W. Germany, etc. Members of the Board of Directors of the society met concurrently. They resolved that an engineering thermodynamics branch and an energy source committee should be established.

6248
CSO: 4009/71

AUTHOR: LI Shuchang [2621 2885 2490]

ORG: None

TITLE: "Review of Some Problems of an Underground Watersealed Cavern for Oil Storage After Being Put into Service"

SOURCE: Chongqing DIXIA GONGCHENG [UNDERGROUND ENGINEERING] in Chinese No 12, 11 Dec 82 pp 20-24

ABSTRACT: Two oil tanks housed in a cavern of a capacity of 40,000 m^3 were filled with No 0 diesel in Sep 76 and No 20 diesel for agricultural use in Oct 77 respectively. Since then numerous samples have been taken and analyzed; the data demonstrate that: (1) The quality of diesel oil stored in underground watersealed caverns without a lining device does not change; the sodium chloride content of the rock crevice water below the oil tanks was 629 mg/l but as the oil and the water remained to be isolated from one another no sodium chloride was detected in the oil. (2) The deisel did not escape through the rock crevices; the water pressure being higher than the oil pressure and the specific gravity of oil being lower than that of the water, the oil can only float on the surface of the crevice water. (3) Due to the fact that no specific measure was taken during the construction of the cavern, a groundwater table funnel-shaped receding curve was formed surrounding the oil tanks. The paper points out the importance of creating an artificial water screen between the cavern and the oil tanks and explains the technique of either building a shaft or drilling holes to supplement the water without affecting the tight seal of the oil tanks in order to prevent the water table from receding in this type of oil storage caverns.

AUTHOR: ZHANG Qingsheng [1728 1987 0524]

ORG: None

TITLE: "Design and Construction of Caisson Air Defense Basement"

SOURCE: Chongqing DIXIA GONGCHENG [UNDERGROUND ENGINEERING] in Chinese No 12, 11 Dec 82 pp 28-30

ABSTRACT: As there are many closely spaced tall buildings in a city, it is difficult to excavate a sufficiently large area to construct a civil defense structure. The author and colleagues recommended the caisson technique of constructing air defense shelters [The paper vaguely hints that the method has actually been adopted in the past few years.] The paper explains that the caisson is a bottomless concrete box and excavation is done inside the box. Depending upon the weight of the walls to overcome the friction of the surrounding dirt, the caisson will sink gradually to a desired depth before a concrete floor may be added to make it into an underground air defense shelter, divided into 3-4 stories if needed. The structure of such as underground air defense shelter, its design calculations, and the caisson technique of constructing it are explained in some detail and illustrated with several drawings.

6248
CSO: 4009/74

Vacuum Equipment

AUTHOR: XING Jun [6717 6511]

ORG: None

TITLE: "Research on Improving the Performance of Metal Oil Diffusion Pump--The Certification Conference of the K-600 A Type Metal Oil Diffusion Pump Research Results Held in Lanzhou"

SOURCE: Shenyang ZHENKONG [VACUUM] in Chinese No 6, 25 Dec 82 inside backcover

ABSTRACT: The Certification Conference of the research results of K-600 A type oil diffusion pump was held in Lanzhou Vacuum Equipment Plant from 30 Oct to 2 Nov 82. This is a scientific research item ordered by Ministry of Machine Industry. The conference was attended by 27 delegates of 14 units including the Bureau of General Application Petrochemistry, Ministry of Machine Industry, Gansu Provincial Bureau of Machines, schools of higher education, scientific research institutes, and factories. The K-600A oil diffusion pump was designed by the Vacuum Teaching and Research Office, Department of Machines, Northeast College of Engineering and test manufactured by Lanzhou Vacuum Equipment Plant. The new pump was found to be tightly structured, simple, low (1/4 lower than the height of similar domestic products), light, low cost, and convenient to maintain. The major performance indices were found to be higher than the standards decreed by the Ministery. It was judged to have reached the domestic advanced level, to cause improved economic benefits. The research was declared to be a success. The major performance indices of the pump and the Ministerial standards are listed in a table.

6248
CSO: 4009/80

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